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10/578,012	09/17/2008	Takahiro Kondo	2006_0556A	3171

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EXAMINER	
MA, TIZE	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/578,012	KONDO, TAKAHIRO	
	Examiner	Art Unit	
	TIZE MA	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Wise et al (U.S. Pub. 2003/0156652 A1).

3. Regarding claim 1, Wise et al teaches an image data-processing apparatus (paragraph [0002], "improvements in methods and apparatus for decompression which operates to decompress and/or decode a plurality of differently encoded input signals"; "this embodiment relates to the decoding of any one or the well known standards known as JPEG, MPEG and H.251."**.** An apparatus to decode image data, e.g., JPEG, MPEG, is an image data-processing apparatus.) comprising:

an image data -decoding unit operable to allow input encoded data fed into said image data-processing apparatus to be decoded through pipeline processing, thereby providing decoded image data (paragraph [0002], decoding a plurality of differently encoded input signals; paragraph [0003], pipeline processor; paragraph [0046], outputting or displaying decoded image data.);

a pipeline controller operable to control the pipeline processing in said image data -decoding unit (paragraph [0003], pipeline processor; paragraph [0036], controlling processing stages) ; and

a memory operable to store the input encoded data and the decoded image data (paragraph [0037], primary and secondary storages; paragraph [0046], memory, storing and retrieving picture data.).

4. Regarding claim 2, Wise et al teaches wherein said image data-decoding unit includes a several staged data-processing unit operable to practice the pipeline processing (paragraph [0036], pipeline with a plurality of processing stages), and

wherein said several staged data-processing unit includes at least two (see below: variable length decoding processing, inverse quantization processing, motion compensation processing) of:

a variable length decoding processing unit operable to practice variable length decoding of the input encoded data, thereby providing quantized DCT coefficients and a motion vector (paragraph [0053], a spatial decoder for video data and having a Huffman decoder; paragraph [0139], variable length coding; paragraph [0116], 64 DCT coefficients (source, quantized or dequantized); also see paragraphs [0588] and [0590] for quantized DCT coefficients; see paragraphs [0129]-[0130] for motion vector.);

an inverse quantization processing unit operable to inversely quantize the quantized DCT coefficients from said variable length decoding processing unit, thereby providing inversely quantized DCT coefficients (paragraphs [0588] and [0590], inverse quantizer, and inverse DCT);

an inverse DCT processing unit operable to practice inverse DCT processing of the inversely quantized DCT coefficients from said inverse quantization processing unit, thereby providing DCT coefficients (This is similar to an inverse quantization processing

unit above. In addition, the claim only requires two elements out of four. See other elements.) ; and

a motion compensation processing unit operable to generate decoded image data of a present frame using the DCT coefficients from said inverse DCT processing unit, the motion vector from said variable length decoding processing unit, and decoded image data of a previous frame stored in said memory (paragraphs [0129]-[0130], motion compensation; paragraphs [0313]-[0314], "The output from the IDCT 83 is passed over line 84 to a temporal decoder"; "As a first output from the fork 91, the control tokens, e.g., motion vectors and the like, are passed over line 93 to an address generator 94.";.....; "The output from the output selector 106 is passed over line 109 to a Video Formatter.").

5. Regarding claim 3, Wise et al teaches wherein said pipeline controller includes:

a start-up table storage unit operable to contain a pipeline start-up table in which start-up information on control over the pipeline processing in said image data - decoding unit is registered (paragraph [1274], the quantization table memory is considered as a start-up table storage unit; paragraph [1278], the default quantization table for MPEG is considered as a pipeline start-up table.) ;

an offset-determining unit operable to determine an offset value for use in referencing the pipeline start-up table in said start-up table storage unit (paragraph [1280], offset from start of quantization table memory.);

a start-up stage-determining unit operable to read the start-up information from the pipeline start-up table in said start-up table storage unit in accordance with the offset

value determined by said offset-determining unit, thereby determining a start-up method for the pipeline processing in said image data -decoding unit (paragraphs [1278] and [1284], determining the start-up method, e.g., MPEG operations.) ; and

a pipeline control unit operable to control said offset-determining unit and said start-up stage-determining unit, thereby controlling the pipeline processing in said image data -decoding unit in accordance with the start-up method for the pipeline processing as determined by said start-up stage-determining unit (paragraphs [1288]-[1294], controlling the inverse discrete transform based on the quantization table values.).

6. Regarding claim 9, Wise et al teaches an image data-processing method (paragraph [0002], "improvements in methods and apparatus for decompression which operates to decompress and/or decode a plurality of differently encoded input signals"; "this embodiment relates to the decoding of any one or the well known standards known as JPEG, MPEG and H.251.".) comprising:

processing image data through a several staged pipeline (paragraph [0003], pipeline processor; paragraph [0036], controlling processing stages);

storing the processed image data (paragraph [0037], primary and secondary storages; paragraph [0046], memory, storing and retrieving picture data); and

controlling the several staged pipeline (paragraph [0036], controlling processing stages).

7. Regarding claim 10, Wise et al teaches wherein said controlling the several staged pipeline includes:

storing a pipeline start-up table in which start-up information on control over start-up of the several staged pipeline is registered (paragraph [1274], the quantization table memory is considered as a start-up table storage unit; paragraph [1278], the default quantization table for MPEG is considered as a pipeline start-up table.);

determining an offset value for use in referencing the pipeline start-up table (paragraph [1280], offset from start of quantization table memory.);

obtaining the start-up information from the pipeline start-up table based on the determined offset value, thereby determining a start-up method for the several staged pipeline (paragraphs [1278] and [1284], determining the start-up method, e.g., MPEG operations.); and

controlling the several staged pipeline in accordance with the determined start-up method for the several staged pipeline (paragraphs [1288]-[1294], controlling the inverse discrete transform based on the quantization table values.).

8. Regarding claim 11, Wise et al teaches wherein said processing the image data through the several staged pipeline includes :

decoding encoded data for each macro block (paragraph [0046], decoding data blocks; paragraph [0053], a spatial decoder for video data and having a Huffman decoder);

detecting a code error from the encoded data (paragraphs [0988]-[0989], error detection); and

practicing error concealment processing (paragraph [0996], concealing data communication error),

wherein when a code error is detected at a macro block during said detecting the code error, said controlling the several staged pipeline includes interrupting decoding processing for macro blocks subsequent to the macro block at which the code error has been detected, whereby the error concealment processing is practiced (paragraphs [0994]- [0996], when Start Code Detector detects certain errors, it generates an interrupt. Then the error concealment processing is practiced.) .

9. Claims 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonzales et al (U.S. 5,289,577 A).

10. Regarding claim 6, Gonzales et al teaches an image data-processing apparatus (Fig. 2, image data coding/decoding system) comprising:

an image data -encoding unit operable to allow input image data fed into said image data-processing apparatus to be encoded through pipeline processing, thereby providing encoded data (Fig. 2, and column 7, lines 9-12, encoding, image memory 22 to CODEC 24);

a pipeline controller operable to control the pipeline processing in said image data -encoding unit (column 4, lines 54-68, processing pipeline and pipeline control); and

a memory operable to store reconfigured image data corresponding to the input image data, and the encoded data. (Fig. 2, and column 7, lines 9-12, image memory 22, and local memory 32).

11. Regarding claim 7, Gonzales et al teaches wherein said image data-encoding unit includes a several staged data-processing unit operable to execute the pipeline processing (Fig. 2, and column 7, lines 9-12, encoding; Fig. 1, Stage i-1 to Stage i+2),

and wherein said several staged data-processing unit includes at least two (see below: motion compensation; DCT processing; quantization processing; variable length encoding) of:

a motion detection processing unit operable to detect a motion vector of a present frame, using the input image data, which is input image data of the present frame, and reconfigured image data of a previous frame stored in said memory (see other four elements. The claim only requires two.);

a motion compensation processing unit operable to generate predicted image data of the present frame, using the motion vector detected by said motion detection processing unit, and the reconfigured image data of the previous frame in said memory (column 13, lines 34-37, motion compensation. Motion compensation inherently requires motion vector detection.);

a DCT processing unit operable to practice DCT processing of a difference between the predicted image data generated by said motion compensation processing unit, and the input image data, thereby providing DCT coefficients (column 7, lines 27-42, DCT-based compression algorithm, and producing DCT coefficients.);

a quantization processing unit operable to quantize the DCT coefficients from said DCT processing unit, thereby providing quantized DCT coefficients (column 7, lines 38-42, quantizing DCT coefficients.);

an inverse quantization processing unit operable to inversely quantize the quantized DCT coefficients from said quantization processing unit, thereby providing inversely quantized DCT coefficients (see other four elements. The claim only requires two.);

an inverse DCT processing unit operable to practice inverse DCT processing of the inversely quantized DCT coefficients from said inverse quantization processing unit, thereby providing DCT coefficients for use in obtaining reconfigured image data (see other four elements. The claim only requires two.); and

a variable length encoding processing unit operable to practice variable length encoding of the quantized DCT coefficients from said quantization processing unit and the motion vector detected by said motion detection processing unit, thereby providing encoded data (column 7, lines 46-55, variable length encoding.).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 4-5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wise et al as applied to claims 2 and 11 above, and in view of Lee (U.S. Pub. 2003/0117585 A1, already of record).

14. Regarding claim 4, Wise et al remains as applied to claim 2 above. Wise et al also teaches further comprising: an error concealment processing unit (paragraph [0996], concealing data communication error),

wherein said variable length decoding processing unit further includes a code error-detecting unit operable to detect a code error from the input encoded data (paragraphs [0988]-[0989], error detection).

15. However, Wise et al does not explicitly teach wherein, when said code error-detecting unit detects the code error at a macro block of the input encoded data, then said error concealment processing unit applies previously decoded image data from said memory onto the macro block at which the error has been detected, and onto subsequent macro blocks, thereby concealing a disturbance in decoded image display, the disturbance being caused by the code error in the input encoded data.

16. Lee, in the same field of endeavor, teaches wherein, when said code error-detecting unit detects the code error at a macro block of the input encoded data, then said error concealment processing unit applies previously decoded image data from said memory onto the macro block at which the error has been detected, and onto subsequent macro blocks, thereby concealing a disturbance in decoded image display, the disturbance being caused by the code error in the input encoded data (paragraph [0243], "in case that a texture error occurred, the current frame is INTRA, no decoded DC coefficient exists, and it is impossible to use the DC coefficient of the adjacent upper block, the macroblock is replaced by the macroblock of the previous frame at the same location."). There are many types of error conditions. Lee listed thirteen error conditions and the corresponding concealing methods. Some method is most appropriate for certain error condition. The above method appears most appropriate for the detected error condition.

17. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatuses as shown in Wise et al and Lee by applying previously decoded image data from said memory onto the macro block at which the

error has been detected, and onto subsequent macro blocks when said code error-detecting unit detects the code error at a macro block of the input encoded data because this error concealing method is most appropriate for the detected error condition.

18. Regarding claim 5, Lee teaches wherein when said code error-detecting unit detects a code error at a macro block of the input encoded data, then said error concealment processing unit excludes previously processed macro blocks from targets at which the disturbance in decoded image display is to be concealed, the previously processed macro blocks being processed earlier, by the number of stages of the pipeline processing, than the macro block at which the error has been detected (Note: the examiner interprets the claim as the concealment process is only applied to the error data, it is not applied to the previously processed "good" data. In paragraphs [0210]-[0214], Lee teaches localizing the extent of an error-occurred location, and minimizing the length of the codes impacted by the error. That is, the error concealing process is only applied to the absolutely necessary blocks of the data.).

19. Regarding claim 12, Wise et al remains as applied to claim 11 above. However, Wise et al does not explicitly teach wherein said practicing the error concealment processing includes applying previously processed image data that is stored by said storing the processed image data, thereby practicing the error concealment processing.

20. Lee, in the same field of endeavor, teaches wherein said practicing the error concealment processing includes applying previously processed image data that is stored by said storing the processed image data, thereby practicing the error

concealment processing (paragraph [0243], "in case that a texture error occurred, the current frame is INTRA, no decoded DC coefficient exists, and it is impossible to use the DC coefficient of the adjacent upper block, the macroblock is replaced by the macroblock of the previous frame at the same location."). There are many types of error conditions. Lee listed thirteen error conditions and the corresponding concealing methods. Some method is most appropriate for certain error condition. The above method appears most appropriate for the detected error condition.

21. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the methods as shown in Wise et al and Lee by applying previously processed image data that is stored by said storing the processed image data, thereby practicing the error concealment processing because this error concealing method is most appropriate for the detected error condition.

22. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzales et al as applied to claim 6 above, and in view of Wise et al.

23. Regarding claim 8, Gonzales et al remains as applied to claim 6 above. However, Gonzales et al does not teach wherein said pipeline controller includes: a start-up table storage unit operable to contain a pipeline start-up table in which start-up information on control over the pipeline processing in said image data -encoding unit is registered; an offset-determining unit operable to determine an offset value for use in referencing the pipeline start-up table in said start-up table storage unit; a start-up stage-determining unit operable to read the start-up information from the pipeline start-up table in said start-up table storage unit in accordance with the offset value

determined by said offset-determining unit, thereby determining a start-up method for the pipeline processing in said image data -encoding unit; and a pipeline control unit operable to control said offset-determining unit and said start-up stage-determining unit, thereby controlling the pipeline processing in said image data -encoding unit in accordance with the start-up method for the pipeline processing as determined by said start-up stage-determining unit.

24. Wise et al, in the same field of endeavor, teaches wherein said pipeline controller includes:

a start-up table storage unit operable to contain a pipeline start-up table in which start-up information on control over the pipeline processing in said image data -decoding unit is registered (paragraph [1274], the quantization table memory is considered as a start-up table storage unit; paragraph [1278], the default quantization table for MPEG is considered as a pipeline start-up table.) ;

an offset-determining unit operable to determine an offset value for use in referencing the pipeline start-up table in said start-up table storage unit (paragraph [1280], offset from start of quantization table memory.);

a start-up stage-determining unit operable to read the start-up information from the pipeline start-up table in said start-up table storage unit in accordance with the offset value determined by said offset-determining unit, thereby determining a start-up method for the pipeline processing in said image data -decoding unit (paragraphs [1278] and [1284], determining the start-up method, e.g., MPEG operations.) ; and

a pipeline control unit operable to control said offset-determining unit and said start-up stage-determining unit, thereby controlling the pipeline processing in said image data -decoding unit in accordance with the start-up method for the pipeline processing as determined by said start-up stage-determining unit (paragraphs [1288]-[1294], controlling the inverse discrete transform based on the quantization table values.). Wise et al discloses a system of video compression/decompression supporting multiple compression standards. The system provides enhanced flexibility, efficiency and performance.

25. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatuses as shown in Gonzales et al and Wise et al because Wise et al's system of video compression/decompression supports multiple compression standards and provides enhanced flexibility, efficiency and performance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIZE MA whose telephone number is (571)270-3709. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao M. Wu can be reached on 571-272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tize Ma/
Examiner, Art Unit 2628